CEN and CLC metrology research needs

CEN/TC312 “Thermal solar systems and components”

1. Standards for Mechanical load testing and approval to withstand loads induced from Wind and Snow, thermal expansion on Solar Thermal Collectors (inroof, on roof, heat district networks free area)
   - o Contact: Dr. Korbinian Kramer (Korbinian.Kramer@ise.fraunhofer.de)
   - o Indicative budget: 600k€
2. Standards for evacuated tubular solar collectors
   - o Contact: Dr. Stephan Fischer (fischer@itw.uni-stuttgart.de)
   - o Indicative budget: 340 k€
3. Standard for PVT collectors
   - o Contact: Dr. Korbinian Kramer (Korbinian.Kramer@ise.fraunhofer.de)
   - o Indicative budget: 700 k€
4. Standards for solar heating systems and storages related to Energy labelling and Eco design (including up and downscaling procedures)
   - o Contact: Dr. Harald Drück (drueck@itw.uni-stuttgart.de)
   - o Indicative budget: 490 k€
5. Standards for accelerated aging tests of solar thermal collectors
   - o Contact: Dr. Stephan Fischer (fischer@itw.uni-stuttgart.de)
   - o Indicative budget: 430 k€

6. Standards for Comparison of different renewable and conventional heating technologies, COP of ST systems
   - o Contact: Dr. Korbinian Kramer (Korbinian.Kramer@ise.fraunhofer.de)
   - o Indicative budget: 460 k€
7. Standard for Indoor performance testing of solar thermal systems
   - o Contact: Dr. Stephan Fischer (fischer@itw.uni-stuttgart.de)
   - o Indicative budget: 350 k€
8. Standard for qualification test on using Photovoltaics for Heating
   - o Contact: Dr. Korbinian Kramer (Korbinian.Kramer@ise.fraunhofer.de)
   - o Indicative budget: 460 k€
9. Standard for Qualification test of combined Heat Pumps and Solar Thermal Systems
   - o Contact: Dr. Korbinian Kramer (Korbinian.Kramer@ise.fraunhofer.de)
   - o Indicative budget: 460 k€
10. Standards for qualification tests for collectors and solar thermal systems operated in harsher conditions (sand, salt, dust, lime, hail, humidity, extreme heat, etc.)
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 800 k€

11. Standards for qualification tests of heat transfer fluids with respect to heat capacity, durability and corrosivity.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 530 k€
12. Standards for the qualification of stratification in thermal storage tanks.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 480 k€
13. Standards for the integration of solar thermal energy in industrial process heat applications.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 700 k€
14. Standards for the integration of solar thermal energy in district heating and cooling grids including geothermal energy.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 800 k€
15. Standards for rating glare effects of solar installations.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 420 k€

16. Standards for performance and durability qualification of ice storages.
    - o Contact: Dr. Andreas Bohren (andreas.bohren@spf.ch)
    - o Indicative budget: 520 k€

17. Standards for performance and durability qualification of TCM (Thermochemical materials) storages.
    - o Contact: Dr. Paul Gantenbein (paul.gantenbein@spf.ch)
    - o Indicative budget: 850 k€

18. Standards for performance qualification of concentrating collectors at medium temperature.
    - o Contact: Dr. Vincenzo Sabatelli / Dr. V.K. Sharma (vincenzo.sabatelli@enea.it;sharma@enea.it)
    - o Indicative budget: 600 k€

19. Standards for on-site performance testing of solar thermal concentrating plant and verification of their energy output.
    - o Contact: Dr. Vincenzo Sabatelli / Dr. V.K. Sharma (vincenzo.sabatelli@enea.it; sharma@enea.it)
    - o Indicative budget: 600 k€

20. Standards for environmental assessment of solar thermal components and systems including standardised procedures for the comparison of the environmental performance of solar thermal systems with other renewable heating systems

- o Contact: Dr. Harald Drück (drueck@itw.un-stuttgart.de)
- o Indicative budget: 470 k€

21. Standards for the determination of energy prices of heat produced by solar thermal systems including standardised procedures for the comparison of the heat prices of solar thermal systems with other renewable and fossil heating systems.

- o Contact: Dr. Harald Drück (drueck@itw.un-stuttgart.de)
- o Indicative budget: 420 k€

Tentative reorganization

#	Title of proposal	Contact person	Reference to #
1	Test procedures for Innovative solar thermal collector and thermal energy storage technologies	Andreas Bohren	2,3,4,12,15,16,17
2	Metrology for assessing the performance of solar thermal systems for nZEB buildings	Harald Drück	7,8,9
3	Development of methods for assessing the environmental impact and cost of solar thermal systems, in comparison with conventional systems	Korbinian Kramer	1,5,6,10,11,20,21
4	Metrological assessment of on-site performance of solar thermal plants and verification of their energy output	Stephan Fischer	13,14,18,19